

COLORADO LESSER PRAIRIE-CHICKEN BREEDING SURVEY 2007

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Starting in early April and continuing until early May 2007 surveys were conducted to determine breeding abundance of Lesser Prairie Chickens (*Tympanuchus pallidicinctus*) in Colorado. Multiple methods were used. Two Colorado Division of Wildlife (CDOW) seasonal employees counted Lesser prairie chickens (LPC's) on known leks in Baca and Prowers counties during the month of April. An intensive roadside survey using agency personnel from CDOW, NRCS & USFWS, seasonal employees, and volunteers was completed. CDOW biologists and DWM's, as well as NRCS employees searched for and counted LPC in Baca, Kiowa, Cheyenne, and Prowers County. LPC census routes and lek counts were conducted by U.S. Forest Service personnel on the Comanche National Grasslands.

Methods

During April 2007 CDOW hired two temporary employees to count all known leks in Baca and Prowers County. An attempt was made to make 3 visits to every known lek, with priority given to leks that were active in 2006. The basic survey method for counting known leks consisted of arriving at the leks 30 minutes prior to sunrise but no later than 9:00 A.M. Upon arriving at the lek 3 counts were made, spaced three to five minutes apart. Every effort was made to count all males, all females and all unclassified birds to obtain a total bird count. This data was recorded on CDOW grouse lek survey forms. Leks visited where no grouse activity was observed were also recorded. CDOW biologists and DWM's attempted to count known leks not covered by the seasonal employees. Locations of all known leks are recorded in Universal Transverse Mercator (UTM, NAD27 datum) coordinates. Each surveyor was provided with maps and a GPS unit to find the leks.

We completed an intensive roadside survey in 2007. During April 16-18 2007, a series of non-random county road based routes were assigned to volunteers and agency personnel. The routes were variable, but approximately 30 miles in length. A stop was made every mile, and surveyors spent 5 minutes listening and looking for lekking activity with the vehicle shut off. The dates chosen were based on the peak of hen attendance occurring April 5-20. We targeted Prowers and Kiowa County with this effort, with the exception of two routes each ran in Cheyenne and Baca County. Targeted areas were adjacent to known or historic leks, in areas previously never surveyed, adjacent to the Kansas state line, or where we have received unconfirmed reports of lesser prairie chickens.

Listening point routes were run again on the Comanche National Grasslands by USFS personnel. These routes are configured to pass through areas of native range and sand sage where LPC's are known to occur and compliment lek counts conducted by the CDOW. This is the fourth year the routes have been run by Comanche Grasslands personnel.

Results

Total LPC detected for 2007 was 74 birds with high-count totals of 42 males, 8

females, and 24 un-classified LPC. Birds whose sex was unknown were added into the high-count total, but were not used to calculate means for high male and female counts. Total number of active leks found in 2007 was 18, with 7 in Baca County, 1 in Kiowa County, and 10 in Prowers County. No active leks were observed in Cheyenne County this year, primarily due to poor lek survey effort. One morning was spent on one Cheyenne County lek. 10 birds were observed in Cheyenne County in a new area during the intensive search, but a lek has not yet been located. Additionally, we received a fairly credible report of a lone LPC flying near the Lincoln/Cheyenne County line on Hwy 94. We were able to confirm one prairie chicken north of Holly within 2 miles of the Kansas state line. We had received numerous reports of LPC in this area. The majority of the potential habitat in this area occurs in Kansas, but there are several large blocks of CRP in Colorado that apparently received LPC use. Lek survey effort was very similar to 2006, with all known Prowers County leks and most known Baca County leks visited 3 times. Overall effort in Kiowa County was higher in 2007 than in 2006, with most of the effort directed at the intensive search looking for new or unknown leks. Kiowa County lek count effort was similar to 2006. Progress was made in 2007 toward increased effort in Kiowa County, but Cheyenne County still did not receive adequate survey effort. The goal is to increase effort in Cheyenne County for 2008. There is a need to check the Cheyenne County location in 2008 to determine if a lek is present or if this was random observation of LPC.

One new lek was found in Prowers County in CRP this spring. This new lek is in southeast Prowers County near the Kansas line and within 1.5 mile of an existing CRP lek.

Comparison Table - Years 2006 / 2007:

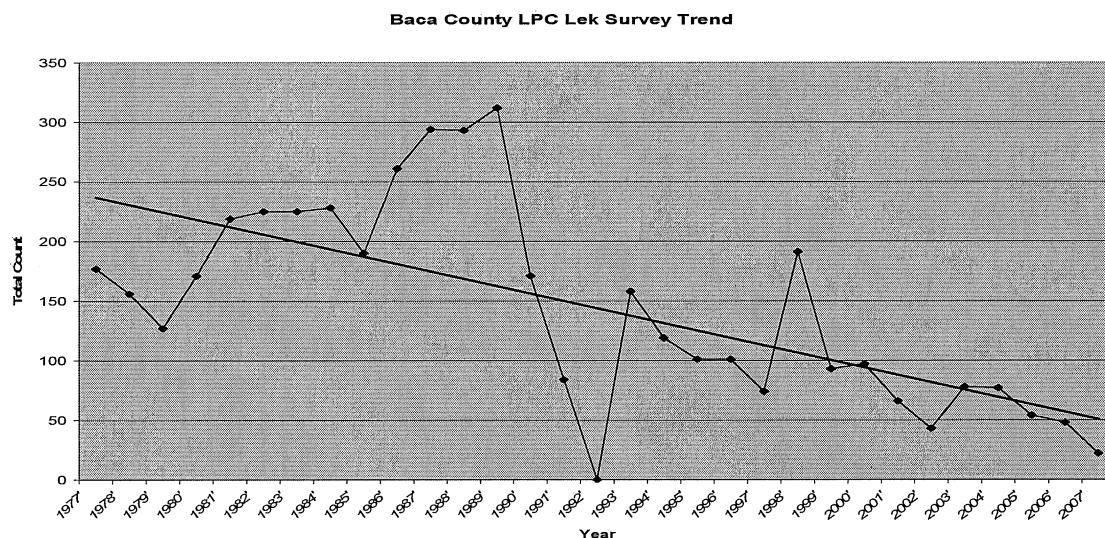
YEAR	MALES	FEMALES	UNKNOWN	TOTAL	ACTIVE LEKS
2006	175	43	72	296	34
2007	42	8	24	74	18

Discussion

Total number of LPC detected in 2007 was 75% less than 2006. There are a number of likely contributing factors to help explain this reduction. First, the January-June 2006 period was hotter and drier than the 1918-2006 long term average (LTA). 2006 Jan.-June total precipitation was 6.7 in. while the LTA Jan.-June total precipitation is 7.7 inches. 2006 Jan.-June Average Maximum Temperature (AMT) was 78.4 degrees F with the LTA Jan.-June AMT being 65.3 degrees F. The April-June nesting/brood rearing period was hotter and drier than normal. 2006 Apr.-June precipitation was 5.06 in. with a LTA Apr.-June precipitation of 5.97 inches. 2006 Apr.-June AMT was 82 degrees F with the LTA AMT being 78.9 degrees F. These climate data are from the Western Region Climate Center Lamar database (<http://www.wrcc.dri.edu>). These hot and dry conditions resulted in less than ideal nesting and especially brood rearing conditions. Grasslands were generally dry and brown, with little green vegetation. This coupled with poor forb production, likely resulting in negative impacts to LPC production. Due to these hot dry conditions and a dry lightning storm there was a series of lightning caused fires totaling about 15,000 acres in June in the heart of Prowers County LPC range. This may have locally impacted production. A large, severe blizzard occurred in late December 2006

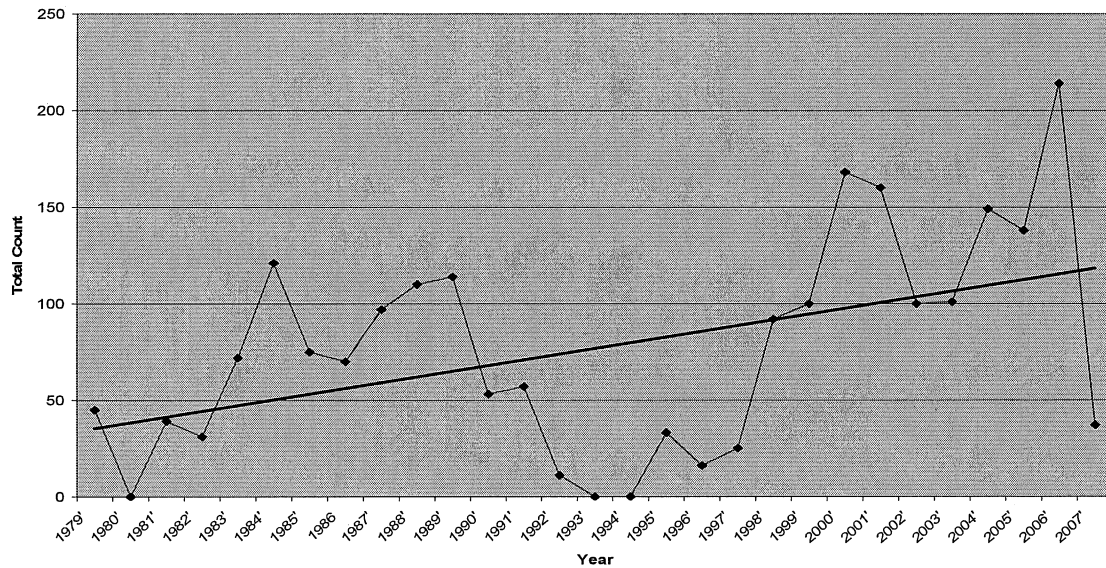
over most of the Colorado LPC range. Snowfall amount in this blizzard was estimated at 30-36 inches. A smaller storm occurred about one week prior to the big storm, and there was nearly a foot of snow present when the big blizzard hit. Both storms had very high winds and drifting was severe. LPC habitat, including sand sage prairie was completely covered, and little to no cover was available to LPC. This storm resulted in deep snow and colder than average temperatures in January and February, before finally warming significantly in March 2007. January 2007 Average Maximum Temperature (AMT) was 25.5 degrees F and average minimum temperature (amt) was 2.98 degrees F. This compares to the LTA for January of AMT 45.27 degrees F and amt 13.59 degrees F. February was similarly colder than average. February 2007 AMT was 31.5 degrees F, and amt was 12.8 compared to LTA of AMT 50.73 degrees F and amt 18.68 degrees F. (Data from <http://www.wrcc.dri.edu> Holly database and CoAgMet monitoring station at Holly, http://ccc.atmos.colostate.edu/%7Ecoagmet/monsum_form.php.) This deep persistent snow cover and extended cold resulted in displacement and possibly higher over-winter mortality than normal for LPC in southeast Colorado.

The following charts display data collected during the annual lek surveys. Baca County long-term trend data are displayed in Chart 1. 22 birds were detected in 2007 on 7 leks, compared to 48 in 2006 on 12 leks.



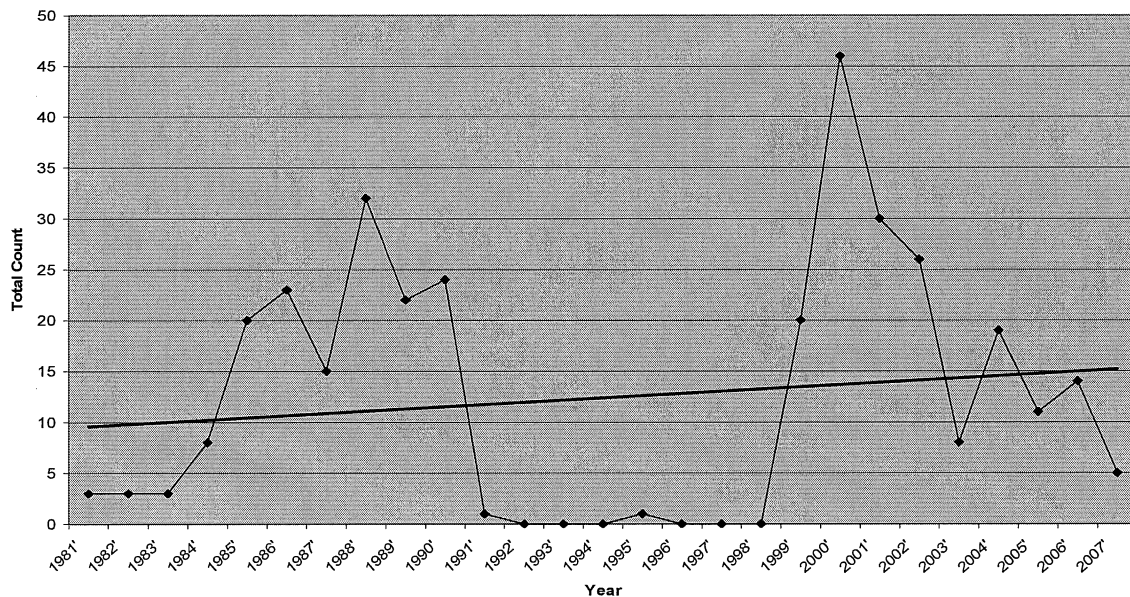
Prowers County long-term trend data are displayed in Chart 2. 37 birds were detected in Prowers County in 2007 on 9 leks. As a comparison, 214 were observed in 2006 on 19 leks.

Prowers County Lek Survey Trend

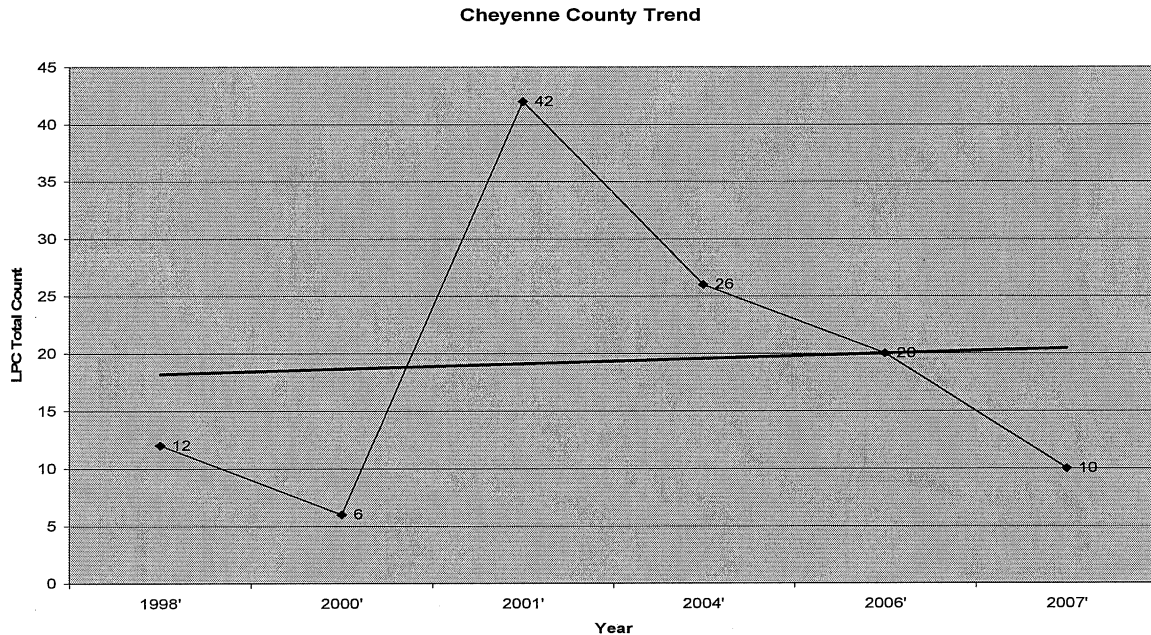


Kiowa County lek trend is displayed in Chart 3. Effort was up considerably in Kiowa County in 2007, but it was directed at locating new leks and surveying new areas. One lek with 5 birds was observed in 2007, while 14 birds were observed in 2006 on 2 leks.

Kiowa County Lek Survey Trend



In Cheyenne County this year there was very little survey effort. No LPC were counted on leks. However, 10 were observed during the intensive search. The limited data available to Cheyenne County are displayed in Chart 4.



Summary

The 2007 survey detected a fairly low number of LPC compared to recent years. A variety of factors, some of which are discussed above likely have contributed to this observation. Similar to the past several years, Prowers County has had the highest number of LPC observed in Colorado. LPC in Baca County continue what appears to be a long-term decline from the historic numbers observed. Effort in 2008 should include continuing lek surveys on all known and historic leks. Additionally, it would be desirable to increase effort in Cheyenne County in 2008, similar to what was done in Kiowa County in 2007.

This effort would not be possible without the help and support of the many private landowners who allowed access for the surveys this spring. I would like to sincerely thank each and every one of you. Your contributions are greatly appreciated. I would also like to thank the numerous volunteers, US Fish and Wildlife Service – Partners for Fish & Wildlife (PFFW) personnel, Baca County Conservation District personnel, Comanche National Grasslands personnel, Fred Dorenkamp, Judi Ogle, and all the CDOW folks who contributed to this year's survey. Thank You!